



Smart. Sustainable. Solutions.

OST Campus Buchs
Sustainability: Regulation & Consequences

27. September 2023
Jens Schürmann

Biesterfeld Group

Holding

Biesterfeld AG
Sales (2022): 1.66 bn € // Employees: 1054

Business Divisions



Biesterfeld
Plastic



Biesterfeld
Spezialchemie



Biesterfeld
Performance Rubber

Service units

Biesterfeld ChemLogS GmbH

BIT-SERV GmbH

The Sustainability Team



Jens Schürmann

- Head of Segment Marketing & Technical Solutions
- Knowledge transfer
- Brochure & Portfolio



Marco Hariri

- Head of BPG Sustainability Team
- Sustainability vision & principles
- Implementation of sustainability concept
- Training contents



Philip Malke

- Product Management for sustainable polymers
- Lead for ISCC PLUS

Our actions

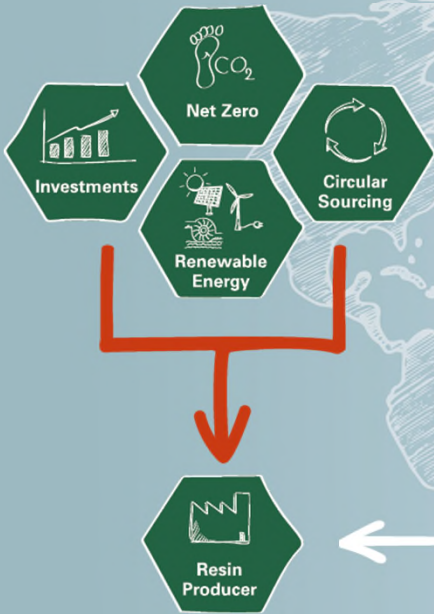
- › Continuous sustainable partner selection
- › Consultation in sustainable solutions
 - › Monolayer vs. multilayer
 - › More durable design – longer life cycle
 - › Design to recycle
 - › Design to compost
 - › ... and many more
- › Knowledge transfer internally & externally
- › Technical engineers to analyse overall carbon footprint in production



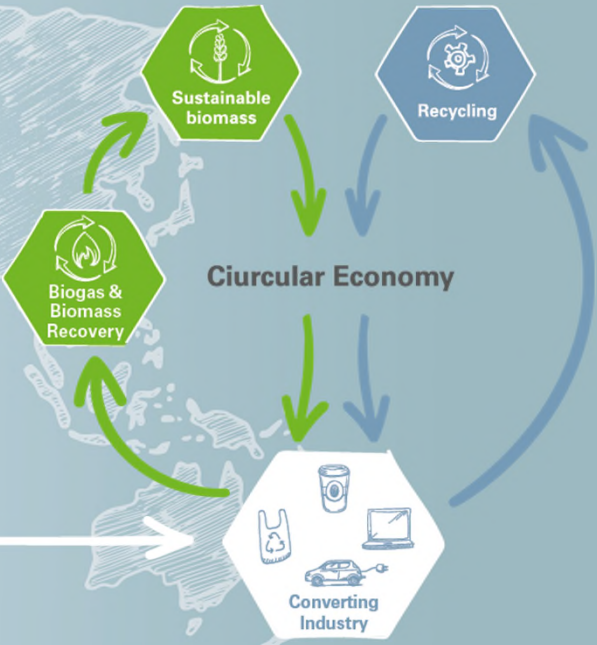
Sustainability @ Biesterfeld Plastic

- › Proactively **guide** and **inspire** on the topic of sustainability!
- › Strive to make every **application** more **sustainable**!
- › Unique **opportunity** to have an impact on the sustainable **transformation**!





Smart.
Sustainable.
Solutions.



Sustainability fun fact

Did you know...

If plastic production would suddenly stop and we had to recycle every landfill plastic...

How long could we theoretically cover global demand running one lifecycle?



Living in a perfect world

From 1950 – 2022

- › 9.500.000.000 mt plastic produced
- › At least 40 % landfilled
 - 3.800.000.000 mt
- › Minimum 10 years of supply
 - Valuable resource



Baseline knowledge: Types of legislation (EU Level)

Opinions

- not-binding
- instrument to make statements
- subjective belief on a topic

Recommendations

- not-binding
- act of suggestion and piece of advice
- making views known and to suggest a line of action

Decisions

- binding
- on those to whom it is addressed
- related to a country alone

Directives

- binding
- legislative act setting a goal countries must achieve
- local laws per country to reach these goals.

Regulations

- binding
- legislative act applied in its entirety across the EU
- foundation is often a directive



Every year, over six million vehicles in Europe reach the end of their life and are treated as waste.

Source: European Commission

Automotive Industry

- › among the largest consumers of primary raw materials
- › but makes little use of recycled materials
- › recycling rates are generally high
 - but scrap metals produced are of low quality
 - and only small amounts of plastic are recycled

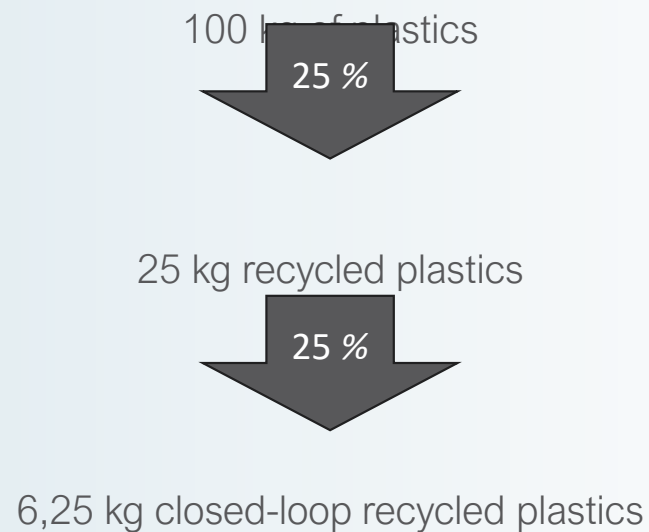
End-of-life vehicles Directive (short: ELV)

- › Official name: Directive 2000/53/EC
- › Applicable for all vehicles put in market after 2030
- › Limitation: Countries write their own national law with minimum requirements from the directive

Prevention	Material coding	Treatment obligation	Collection systems	Information	Quota monitoring
<ul style="list-style-type: none">•Reduction of hazardous substances•Design for sustainability•Increase demand for recycled material•Forbidden materials	<ul style="list-style-type: none">•Identification of hazardous material / component•Identification for better recycling	<ul style="list-style-type: none">•Obligates treatment facilities to drain all fluids and remove all hazardous components•Removal & recovery of valuable raw materials	<ul style="list-style-type: none">•Responsibility of any given producer to take back the vehicle it has introduced to the market•Obligation does not mandate the producer to do it physically on its own	<ul style="list-style-type: none">•Constant and palpable communication to stakeholders:•National environmental authorities•Customer•Treatment facilities	<ul style="list-style-type: none">•Measure the actual performance of the countries

What will happen: A start, but far from circular economy

Ensure that at least 25% of plastic used to build a vehicle comes from recycling
(of which 25% from recycled ELVs)



ISCC Plus

- What is ISCC Plus?
 - It's an international certification system founded in Germany, Cologne
 - Main aspect of the certification is the traceability of sustainable raw materials and products through the supply chain by the mass balance approach
 - It's the globally leading mass balance certification system with strong growth rate and already more than 3.000 certified companies



ISCC Plus

Members

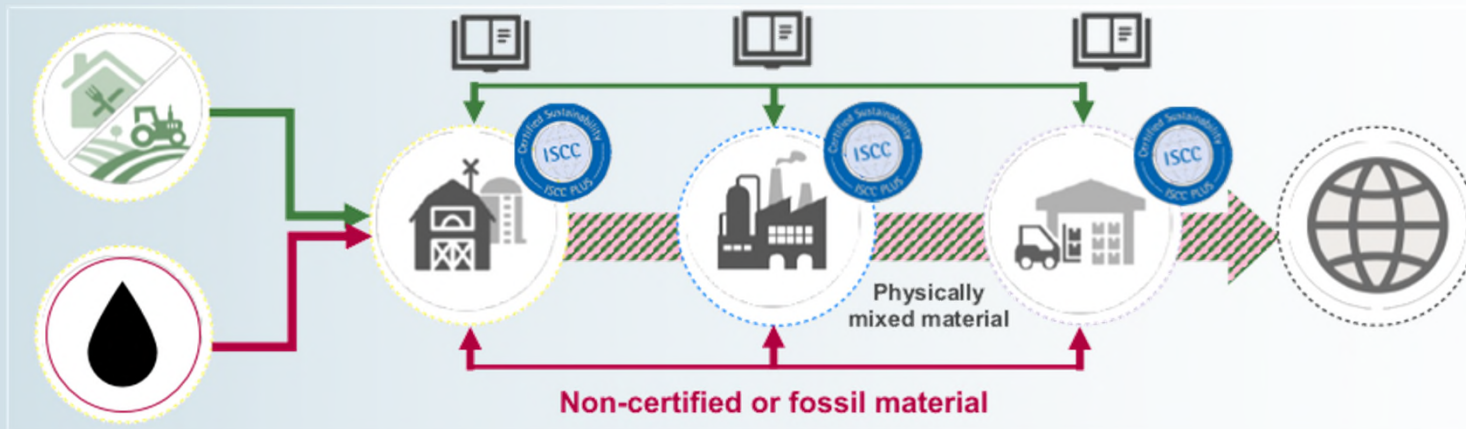


ISCC Plus



Rules

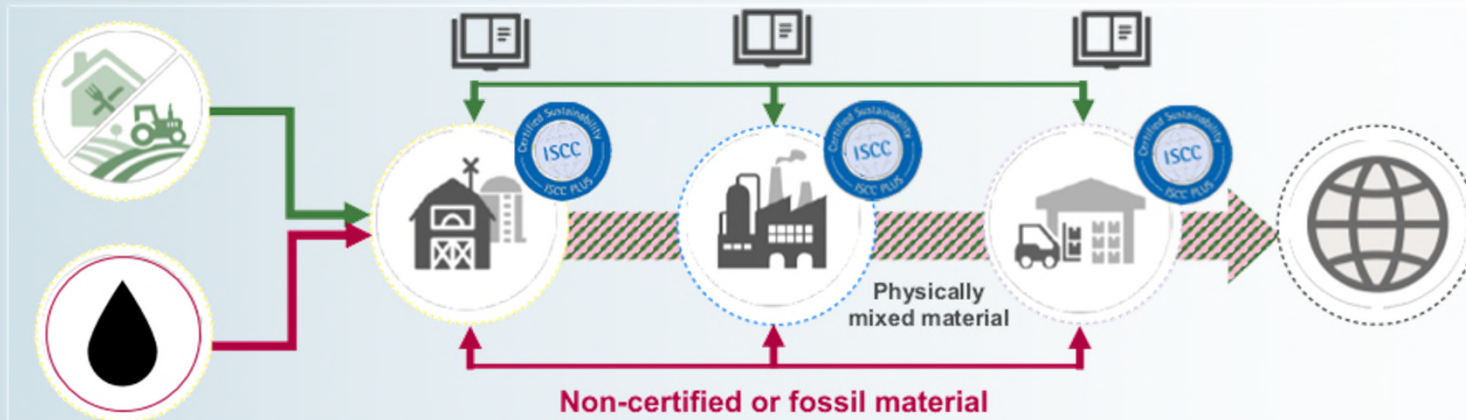
- All members of the supply chain need to be ISCC Plus certified
- Only the specific quantity of sustainable ISCC Plus certified raw material which gets into the supply chain, can be distributed and processed as sustainable ISCC Plus certified material



ISCC Plus

Example

- 1 to. sugarcane processed to 1 to. bio naphtha
 - 3 to. oil processed to 3 to. naphtha
 - Together processed to 4 to. monomer with identical properties like monomer from 100% fossil source
 - Processed to 4 to. polymer with identical properties like polymer from 100% fossil source
 - Secured information that only 1 to. of the 4 to. polymer are sustainable according to ISCC Plus certification
- ✓ No greenwashing possible
- ✓ Green energy contract principle



ISCC Plus

Differentiation















ISCC Plus

Sustainable raw material groups



- Bio: Harvested plants but not in competition to food chain
- Bio-circular: Already existing residues which are refined
- Circular: Mechanical or chemical recycling of plastic parts

Bio		Bio-circular		Circular (technical)	
					
Corn	Canola	Tall Oil	UCO	Mixed Plastic Waste	End-of-life tires
					
Sugarcane	Cotton	Forestry residues	Straw	Waste textiles	CO2 (post-industrial)

ISCC Plus



Advantages

- ✓ Guarantee that only the specific quantity of sustainable ISCC Plus certified raw material which gets into the supply chain, can be distributed and processed as ISCC Plus certified material
 - The supply chain becomes a chain of custody

- ✓ No greenwashing possible: Our customers can claim their applications with valid sustainability claims with ISCC Plus reference

- ✓ Protection of ecology and people: No deforestation, protection of soil, water, air, working conditions, human rights etc.

- Green energy contract principle



ISCC Plus



Advantages

- ✓ Segregated production of polymers is not scalable except for a few polymers like PLA
- ✓ No quality or performance restrictions (approvals, norms etc.) in comparison to classic non-certified fossil-based material versions as the monomer at the beginning of the production process is identical
 - ✓ Food contact possible
 - ✓ Medical approvals possible
 - ✓ Drop in solution: Theoretically no sampling needed if classic fossil based material version has already been tested
- ✓ Bio and bio-circular based mass balanced materials have a lower carbon footprint than recycling based materials
- ✓ Mass balance is mandatory for several chemical recycling technologies

ISCC Plus



- Biesterfeld Plastic is already certified for more than 16 countries with the aim of coverage of all global locations
- Check our Smart. Sustainable. Solutions. portfolio for ISCC Plus materials and more [Link to Biesterfeld portfolio](#)
- Check if your suppliers and customers are already certified - [link to ISCC Plus certification database](#)

Status ▲	Certificate ID ▲	Certificate Holder ▲	Scope* ▲	Raw Material ▲	Add-Ons** ▲	Prod-ucts ▲	Valid From ▲	Valid Until ▼	Suspen-ded ▲	Issuing CB ▲	Map ▲	Certifi-cate ▲	Audit Report ▲
	ISCC-PLUS-Cert-DE104-44232301	Biesterfeld Plastic GmbH, Hamburg, Germany	TRS				2023-01-14	2024-01-13		GUTCert			
	ISCC-PLUS-Cert-DE104-47472201	Biesterfeld Interowa GmbH & Co KG, Vienna, Austria	TRS				2022-11-28	2023-11-27		GUTCert			
	ISCC-PLUS-Cert-DE104-46652201	Biesterfeld Polybass spa, Milan, Italy	TRS				2022-05-25	2023-05-24		GUTCert			
Status	Certificate ID	Certificate Holder	Scope*	Raw Material	Add-Ons**	Prod-ucts	Valid From	Valid Until	Suspen-ded	Issuing CB	Map	Certifi...	Audit...

Showing 1 to 3 of 3 entries (filtered from 45,746 total entries)



Biesterfeld

Competence in Solutions

Disclaimer

This presentation includes different statements referring to the future development of the Biesterfeld Group. These statements are based on assumptions as well as estimations. Although being convinced of our forecasted statements, we are not able to guarantee the depicted development.

Our assumptions include risks and uncertainty, which may lead to deviations between actual and predicted results. It is not intended to update the forecasted statements presented here.

This presentation is not complete without the oral explanations given.